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The Impact of Behavioural Biases on Individual Investors’ Decision-Making

An Analysis of Cognitive and Emotional Biases in Investment Choices

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Abstract

The purpose of this study is to investigate the role that behavioural biases play in the investment decisions made by individual investors. In particular, the purpose of this study is to investigate the cognitive and emotional biases that may affect the investment choices made by individual investors. The goal of the study is to understand how certain cognitive biases might affect the decision-making process of investors and to give insights that can aid investors in making better-informed judgements.

The research question that will be investigated in this study are as follows: What are the cognitive and emotional biases that affect individual investors’ decision-making, and how do these biases impact their investment decisions?

A comprehensive literature review was conducted to introduce and identify the various cognitive and emotional biases that can influence the decision-making of individual investors.

The study section investigates the behavioural biases that may be associated with different investment strategies, such as dividend investing, growth investing, and value investing. Using Google Trends data, the author analyses the search volumes for these keywords globally and in specific regions, such as Russia and Vietnam. The search volumes and the reasons behind them suggest that behavioural biases may be at play.

Overall, the study emphasizes the relevance of detecting and controlling behavioural biases to make better financial decisions through education and awareness raising of the issue. This can potentially improve investment decision-making and portfolio performance.

Keywords: Behavioural bias, Investing, Cognitive bias, Emotional bias
## Contents

Glossary

1 Introduction 1

2 Methodology 2

2.1 Theoretical framework 3

2.2 Google trends 3

3 Behavioural finance 4

3.1 Emotional biases 5

3.1.1 Loss aversion bias 5

3.1.2 Regret aversion bias 6

3.1.3 Mental accounting 7

3.1.4 Status quo bias 8

3.1.5 Endowment bias 8

3.1.6 The disposition effect 9

3.1.7 Overconfidence bias 9

3.1.8 The phenomenon of panic 10

3.1.9 Attachment bias 11

3.2 Cognitive biases 11

3.2.1 Conservatism bias 12

3.2.2 Anchoring bias 12

3.2.3 Confirmation bias 13

3.2.4 Hindsight bias 14

3.2.5 Recency bias 14

3.2.6 Gambler’s fallacy 15

3.2.7 Illusion of control 15

3.2.8 Representativeness bias 16

3.2.9 Survivorship bias 17

3.2.10 Outcome bias 17

3.2.11 Familiarity bias 18

3.2.12 Affinity bias 18

3.2.13 Herding bias 18

4 Google trends study 19
List of Figures

Figure 1. Graph representing the number of Google searches with the words “stocks to buy now” and “market crash”

Figure 2. Graph representing the amount of google searches made globally with words “dividend investing”, “growth investing” and “value investing.”

Figure 3. A pie chart showing the search volumes made globally.

Figure 4. Pie chart showing keyword search results from Russia from period 15.2.2018–15.2.2023

Figure 5. Graph representing the amount of Google searches made in Russia with the words "dividend investing," "growth investing," and "value investing."

Figure 6. Graph representing the amount of Google searches made in the USA with the words "dividend investing," "growth investing," and "value investing."

Figure 7. Pie chart showing keyword search results from the USA with a timeframe of 15.2.2018–15.2.2023

Figure 8. Graph representing the amount of Google searches made in Vietnam with the words "dividend investing," "growth investing," and "value investing."

Figure 9: Graph of the VN30 index performance for the past 5 years

Figure 10. Pie chart showing keyword search results from Vietnam from the period 15.2.2018–15.2.2023

Figure 11. Berkshire Hathaway vs Ark Innovation ETF performance
Glossary

EMH       Efficient-market hypothesis

FOMO     Fear of missing out
1 Introduction

The field of behavioural finance studies why investors act the way they do by going beyond traditional finance models, such as the efficient-market hypothesis (EMH), which assume that investors make decisions in a logical way. The efficient-market hypothesis is a theory in finance that states that financial markets are efficient and that the prices of assets that are traded reflect all the public information. This means that you can't consistently get returns above the average of the market with information that is freely available. (Fama, 1970, pp. 383–417.)

Behavioural finance, on the other hand, claims that investors often make decisions based on their emotions, biases, and heuristics, which can lead to less-than-ideal results. Biases are systematic mistakes in decision-making that are made because the human brain processes information in a certain way.

Behavioural biases in finance are important because they can have a big effect on how people choose to invest their money. These biases can lead investors to make decisions based on incorrect or incomplete information, which can lead to suboptimal results. They can also cause investors to take on too many risks or not take the right steps to reduce them, which can be bad for their portfolios.

In behavioural finance, the idea of biases is important because it acknowledges that investors are not always rational and that human behaviour can be affected by many things, such as emotions, cognitive limitations, social norms, and personal biases. By knowing how these biases may affect investment decisions, investors can come up with ways to reduce their effects and make better decisions that can lead to better portfolio performance.

The role of individual investors in financial markets is undeniable, as they make up a large part of the overall investment landscape. Individual investors typically rely on their own expertise, experience, and intuition to make investment
decisions, which sets them apart from institutional investors. Institutional investors often have access to sophisticated research and analysis tools.

The psychological and emotional factors influencing individual investors' decisions can be addressed to enable them to make better educated and well-considered investments, thereby benefiting financial markets and achieving more optimal performance in their investment portfolios.

The research question for this study is: What are the cognitive and emotional biases that affect individual investors' decision-making, and how do these biases impact their investment decisions? This research on the psychological aspects that influence how risk is perceived by individual investors, their preferred types of investments, and the effects of cognitive and emotional biases on investing results will be guided by this question.

By giving an answer to this question, we hope to learn more about how biases affect investment decisions and come up with ways to reduce their negative effects.

Furthermore, the author will utilize a non-traditional data source, Google Trends, to test for the presence of bias and provide new insights into investor behaviour.

2 Methodology

The approach and procedures utilised to carry out the research are described in the methodology portion of this thesis. This section's objective is to provide the reader a thorough understanding of the research's methodology so they can judge the accuracy and dependability of the findings. This section will discuss the study design, data collecting, sample, validity and reliability.
2.1 Theoretical framework

The research plan for this section will use qualitative research. The approach used is secondary research, where existing data is used. Data sources used for this section will be academic journals, books, and websites. A thematic analysis will be used when looking at the data for the literature review. Thematic analysis involves identifying and analysing patterns or themes within a dataset.

There are a few limitations to the literature review. One problem is that the research is always changing, so new studies might have come out after the study was made. The literature may also be affected by publication biases, which happen when only studies with important results are released.

2.2 Google trends

Google Trends, an online tool that gives access to search data from Google's search engine, was used to gather the data for this study. The author chose to collect statistics for keywords that had been used globally and picked the period from March 11, 2018, to March 11, 2023. The words "market crash" and "stocks to buy now" were used to find out how many people were looking for those things and their search volume. The other statistics were between keywords "growth investing", "dividend investing," and "value investing" within the same time period. The information was taken from Google Trends as a CSV file and put into Microsoft Excel, where it was made into a chart. An example of this can be seen in Figure 1.

This study used a quantitative research strategy to look at the association between the number of searches for two terms, "market crash" and "stocks to buy now," and any possible biases in behaviour that may be linked to these searches. This method was used to look at how the number of searches for keywords changes over time. Different events during certain periods may trigger actions from investors that may not be rational.
To analyse the data, the search interest index for each keyword will be calculated. This index compares how popular a search term is at present to how popular it was at its peak during the chosen time frame. Google Trends provides index data up to 100, where 100 is the highest number of people who have expressed interest by searching for the keyword for the specific time and location selected.

One of the limitations of this study is that the data was only retrieved globally and from one time period. (March 11, 2018, to March 11, 2023). This could make it harder for results to be used in a specific country or at different time intervals. Additionally, Google Trends data only indicates how popular something is relative to other topics. It does not specify why people search for something or what kind of people look for it. These factors may also affect the results of the study.

3 Behavioural finance

Behavioural finance is the study of how psychological, social, and environmental factors affect how people make decisions regarding their money. It questions the standard idea that financial markets are rational and efficient. It does this by recognising that investors don’t always make decisions that are objective or logical.

One of the most important things that behavioural finance has taught us is that buyers are affected by more than just how they calculate risk and profit. These include, among other things, social rules, cultural views, cognitive limits, and heuristics. Behavioural finance tries to figure out how these things affect how investors act and how they can be used to help people make better financial decisions. (Kapoor & Prosad, 2017, pp. 50-54)
3.1 Emotional biases

Emotional biases occur when our feelings affect decision-making, which often leads us to think in ways that are not logical or objective. Various things, such as past experiences, personal beliefs, and cultural norms, may cause these biases. Emotions are a big part of how we see the world around us, and they can have a big effect on what we do, how we act, and our decision-making.

Because of this, it's important to understand emotional biases so we can learn how emotions can affect how we make decisions and come up with ways to lessen the negative effects of emotional biases. This section will look at various kinds of emotional biases and how they affect decision-making. It will also look at ways to lessen their effect.

3.1.1 Loss aversion bias

Loss aversion is the tendency for people to feel greater emotional distress when experiencing a loss than the pleasure of experiencing a gain. This causes individuals to make decisions based on the fear of losing rather than on the likelihood of winning. Which leads to decisions that are suboptimal. (Kahneman, D., Knetsch, J. L., & Thaler, R. H., 1991, pp. 199-203)

As a motivation factor, avoiding losses may be twice as powerful as making a gain. Therefore rational investors should make decisions that are riskier with the intention of making a bigger profit, not to minimize losses. (Pompian, 2012 pp. 38-39)

In order to limit losses, investors may choose to keep losing investments for a longer period of time due to the loss aversion bias, even though a fundamental analysis shows that the stock should not be valued higher. A successful stock may experience a similar situation. Even if a fundamental study shows that a stock has higher value, an investor may sell a stock they have profited from since they do not want to lose any of the profits. (Pompian, 2012 pp. 39)
3.1.2 Regret aversion bias

Regret-aversion bias occurs when investors avoid making decisions that will lead to action because they are fearful of the outcome. Investors try to avoid the pain of regret that comes with making bad choices. Fear of regret can make investors stay in positions for too long. They do not want to sell because they are afraid the investment value will increase in the future, and they will feel regret if they do.

Regret aversion can also prevent investors from investing in a stock that has just had a big loss or gain. After losing money, our instincts tell us that it's not smart to keep investing. The fear of regret can make us stay out of the stock market when it's the best time to invest. On the other hand, the fear of getting in at the peak can stop people from making new investments.

Regret-aversion bias might engage in herding behaviour. Investors may feel safer in popular investments, so they will not have as much to regret in the future. It may feel safe to be with other people, and any emotional pain seems to diminish. (Pompian, 2012, pp. 41–42)

It should be noted that regret is usually stronger when terrible things happen because of bad decisions than when terrible things happen because people do not do anything. Regret is separate from dissatisfaction because the individual experiencing regret is personally responsible for the bad thing that happened, while this is not always the case with dissatisfaction. For example, an investor will feel dissatisfaction when a poor investment decision is made by a portfolio manager, while a poor investment outcome that is the direct result of a wrong decision will make the investor feel bad about what they did.

When investors do not buy shares in small companies out of regret, demand goes down for small-cap shares, which leads to prices going down. However, this makes the possible returns higher. Buying shares in blue-chip companies raises their price because more people want them, which lowers the possible
return. Therefore, the shares of small-cap companies often give better returns than the shares of blue-chip companies. (Lekovic, 2020, pp. 86–87)

3.1.3 Mental accounting

Investors may perceive information differently when dealing with the same amount of money due to a mental accounting bias. Compared to the money they receive from their wages, people often spend more of the money they receive through tax refunds, dividends, and gifts. Differentiating how you handle money based on where it originates from is illogical. Keeping two portfolios, one safe and one dangerous, when investing is a form of mental accounting. It costs nothing to have two portfolios rather than one, yet it has no impact on your net worth. (Moosa & Ramiah, 2017 pp. 37)

An investor may chase investing opportunities with high yields or risky bonds with high dividends, but they can lose a lot of value if the company that issued the dividend experiences financial hardship and their worth erodes. (Pompian, 2012, p. 34)

It is also shown by research that investors value dividend income more than capital gains, although the sum is the same. This is because they can be treated differently. Dividends also help people feel like they have control over their money because shareholders spend the money they receive in dividends. However, when capital gains are realised, people may not be able to control themselves and spend too much money because they have a lot more money to spend. (Lekovic, 2020, pp. 82–83) This may also lead to regret aversion bias because if the investors choose to sell and get capital gains and the stock price increases, there is a risk that they will start to regret their decision.

From Ngoc's (2014) questionnaire research (pp. 6–12), mental accounting had the highest impact on investors from the prospect theory variables. With a mean result of 4.12, investors treated their owned assets separately in their portfolio.
3.1.4 Status quo bias

When presented with alternatives, status quo bias refers to the investor’s decision to do nothing and stick with the original choice (Samuelson and Zeckhauser, 1988, pp.8)

The investor believes it is preferable to stick to the original decisions and not make any changes. A stock sale might increase the remorse associated with a bad investment choice. The tendency to fall for the status quo bias is higher when more options are available for the investor. (Samuelson and Zeckhauser, 1988, pp. 8)

We tend to feel safer when we stick to what we know instead of trying something new. A correlation between the status quo bias, the endowment effect, and the fear of losing has been discovered. However, staying with the way things are is a choice in itself. Trying to avoid the bad results of a choice has an investment risk, which is giving up the possible profits of a change. (Moosa & Ramiah, 2017, pp. 102-106)

3.1.5 Endowment bias

The endowment effect refers to the tendency for individuals to esteem something more highly when they own it than when they do not. This bias can drive individuals to overvalue their stocks and prevent them from selling, even if they are offered a reasonable price. (Kahneman, Knetsch, & Thaler, 1991 pp. 194-197)

Endowment bias may cause investors to do the same things as status quo bias. In this case, an investor does not get rid of some assets and replace them with others. For example, investors hold onto inherited stock because they feel emotionally attached to it, even though they could lose a lot of money if the stock goes down. Even when things don't look good, these investors often do not want to sell.
Investors keep holding on to assets they already know about. Investors might think they know everything there is to know about the investments they already have and might be hesitant to buy things they do not know much about. When people are familiar with an investment, they regard it as being worth more (Pompian, 2012, pp. 41)

3.1.6 The disposition effect

The disposition effect argues that investors are less likely to sell assets that are worth less than when they bought them. This means that individual investors tend to sell stocks whose prices have gone up compared to when they bought them rather than stocks whose prices have gone down. This is a bad decision by the investor because research has shown that the average return on stocks that are sold is higher than the average return on stocks that investors keep. (Ngoc, 2014, pp. 5–6) (Odean, 1998, pp. 1775–1777)

3.1.7 Overconfidence bias

Overconfidence bias occurs when people overestimate their talents and knowledge. This can lead to excessive trading that can result in decreased returns and higher transaction costs (Barber and Odean, 2001 pp.264-266)

Investors who think that their past successes were due to their skills, and their failures were due to bad luck are probably overconfident. An investor with too much confidence wants to utilize his skills and knowledge to gain bigger returns. (Chen et al., 2007, pp. 246).

Barber and Odean found via research that men traded on average 45% more often than women. Glaser and Weber demonstrated that a higher volume of trade is a sign of a higher level of confidence. In addition, investors with more money and power are more confident in themselves. (Lekovic, 2020 p.81)
With the right skill and knowledge, investment decisions can have negative consequences like excessive trading, ignoring potential risk factors, and holding insufficiently diversified investments. (Pompian, 2012, p. 39)

In the research conducted by Ngoc (2014) (pp. 6–12), individual investors decision-making was analyzed by a questionnaire. The investors were active on the Ho Chi Minh Stock Exchange. Later, this study will be referred to as Ngoc’s questionnaire research. The questionnaire was sent to 300 people, with 188 respondents. The results Ngoc got were that the overconfidence had a moderate impact on the investor. The scale that was used went from 1 to 5, and the mean for the question regarding overconfidence had a mean of 3.66. The question that the investor answered was if they believed they had the ability to beat the market with their skills and abilities. Previous studies have indicated that Asian investors would be more confident than European or American investors, but this study does not strongly indicate the same results. (Ngoc, 2014, pp. 6–12)

(Phan & Zhou, 2014, pp. 79–94) did another study in which they surveyed 398 investors and looked at the results. Vietnam was where the study was done. From the psychological factors that had a significant effect, they discovered that overconfidence impacted the individual investor’s decision-making process.

3.1.8 The phenomenon of panic

Panic is a sudden, overwhelming feeling of fear or anxiety that can’t be controlled and makes people act frantically and without much thought. Collective panics occur on the financial markets from time to time, and they generally entail a massive surge of sudden purchasing or selling. A buying or selling panic could be described as a market bubble or crash. (Moosa & Ramiah, 2017 pp. 100-101)
3.1.9 Attachment bias

An investor who experiences attachment bias will only pay attention to an investment's positive attributes while ignoring its negative ones. Investors who become emotionally invested in a stock could miss negative news regarding the firm that issues the stock. Attachment bias makes people judge things less objectively. For example, they might hold on to a falling stock for too long because they think it will increase in value to minimize losses. Emotional attachment can make it hard to make good decisions, which can lead investors to pay too much for an asset or take on too much debt. (Moosa & Ramiah, 2017, pp. 112-113)

3.2 Cognitive biases

Cognitive biases are systematic errors in thinking and making decisions that result from the way we think. These biases can make it hard to think rationally and objectively, which can change how we act, judge, and make decisions. Cognitive biases can be caused by social influences, mental shortcuts, or heuristics.

Heuristics are mental shortcuts that we use to make decisions easier. They are often based on our past experiences and assumptions. Heuristics can be helpful sometimes, but they can also cause cognitive biases.

It is important to understand cognitive biases for a number of reasons. These biases can make us make suboptimal decisions, making it harder for us to make smart, rational, and well-informed decisions.

Knowing about the various kinds of cognitive biases and how they affect our decision-making is beneficial. By producing ways to reduce the effect of cognitive biases, we can make better decisions and avoid behaviours that are
not optimal for us. This section will look at the various kinds of cognitive biases, how they affect decision-making, and ways to lessen their effect. This research will help you understand how cognitive biases affect decision-making and produce ways to improve it.

3.2.1 Conservatism bias

Conservatism is a bias that prevents investors from taking fresh information into account. It also leads people to overweigh their initial views about outcomes and underreact to new knowledge, meaning they frequently fail to change their attitudes and behaviours, which leads to suboptimal decision-making (Pompian, 2012, pp. 27–28).

When the investor does not react enough to the available information, it causes short-term momentum in stock returns. A trader has shortened the company stock after hearing and reading news about the upcoming weak quarterly earnings report. When nearing the earnings report date, new information comes up that indicates the earnings will be better than expected. If the trader does not react to the new information and keeps the original estimate, he falls for the conservatism bias. (Moosa & Ramiah, 2017 p. 117)

3.2.2 Anchoring bias

Anchoring is a term for what happens when people make estimates based on some initial values. Different starting points lead to different estimates, so these numbers are skewed towards the initial value. When selling or analysing an investment, investors always look at the price they paid for it first. So, prices today are often based on prices from the past. (Ngoc, 2014, p.3)

Another example of how anchoring happens in the financial markets is when investors make decisions based on numbers and statistics that are not relevant to their decisions. For example, an investor buys stocks whose prices have
dropped a lot. In this case, the investor is anchored on a recent price and thinks that a lower price is a good time to purchase. (Moosa & Ramiah, 2017 p. 36)

In the research conducted by Ngoc (2014) (pp. 6–12), individual investors decision-making was analyzed by a questionnaire. The investors were active on the Ho Chi Minh Stock Exchange. The results Ngoc got were that the anchoring had a moderate impact on the investor. The scale that was used went from 1 to 5, and the mean for the question regarding anchoring had a mean of 3.49. The question considered was whether the investor forecasted how stock prices would change in the future based on how they had changed in the past. With 188 respondents to the questionnaire, it can be suggested that the number of respondents in this study is enough for quantitative research so that statistical methods of data analysis can be used.

3.2.3 Confirmation bias

Confirmation bias is a belief in which investors tend to look for and notice what supports their beliefs and to ignore or undervalue what goes against them. This behaviour includes aspects of selective perception and is a common way for people to convince themselves of what they want to believe by giving more weight to evidence that supports their beliefs and ignoring or changing evidence that goes against their beliefs.

A sign of confirmation bias is an under-diversified portfolio, which exposes them to too much risk. Investors may come to believe that a single company and its stock are worth a lot. They do not pay attention to bad news about the company or its stock. Instead, they only look for and use information that proves the company is a good investment. They build up a large position and end up with a portfolio that is not well diversified. (Pompian, 2012, pp. 28–29)

Investors often make bad financial decisions when they leave out information and do not give enough weight to evidence that goes against them. The investor does not take into account the entirety of the information, so his or her
beliefs and decisions are based on a limited set of information. It would be beneficial for the investor to be open to learning something new or changing their mind about their opinions and beliefs when making decisions. (Lekovic, 2020, p. 88)

3.2.4 Hindsight bias

Hindsight bias occurs when things that happened in the past seem more reasonable and predictable now than they did at the time they happened. An investor may say, "I knew it was going to happen," to an event after it happens and think that the event was more predictable than it was. It also leads to oversimplifying the relationship between causes and effects. Investors tend to think, after the fact, that the start of a past event could have been predicted and was obvious, when the event could not have been predicted. This makes us think that events are predictable. Hindsight bias is simply the tendency to think that your predictions are better than they really are.

Hindsight bias makes investors remember their successes but not their failures and think that investment outcomes are much more predictable than they really are. It could make people buy and sell things based on their feelings instead of facts and numbers. Also, hindsight bias can lead to overconfidence.

Hindsight bias is important when it comes to market bubbles because if it had been clear that a bubble was forming at the time, as some people say when they are affected by hindsight bias, the bubble would not have been able to last and would have burst sooner. (Moosa & Ramiah, 2017, pp. 99-100) (Pompian, 2012, p.31)

3.2.5 Recency bias

Recency bias is a way of thinking that makes people remember and focus on things that happened recently more than things that happened in the near or far past.
Recency bias might lead investors to infer trends and make projections based on prior data samples that are too small to guarantee accuracy. Investors who make too many predictions about future returns based on a small number of recent returns are likely to buy when prices are at their highest. Most of the time, these investors buy into asset classes at the wrong times and lose money.

Also, it may make you ignore the right way to divide up your investment portfolio. This can happen because the investor follows “hot” stocks that are trending at the moment, which may all be in the same industry. (Pompian, 2012, pp. 37-38)

3.2.6 Gambler’s fallacy

The gambler's fallacy, also called the Monte Carlo fallacy, is the belief that if something happens more often than usual, it will happen less often in the future. The belief also works the other way around. If something happens less often than usual, it will probably happen more often in the future to get back to "normal." In the same way, the fallacy says that failures in the past lead to a higher chance of success in the future. The same fallacy applies to a stock price that goes up for ten days but has to go down on the eleventh. So, the gambler's fallacy comes from or shows a basic lack of understanding of how probability works. (Moosa & Ramiah, 2017 p. 94)

3.2.7 Illusion of control

Illusion of control is when people think they have control over uncontrollable events, or at least that they can change how they turn out. One problem with the illusion of control is that it makes people less aware of clues from their environment that tell them they do not have as much control as they think they do. (Moosa & Ramiah, 2017, p. 115)

Investors like to put their money into stocks where they think they can control what happens. It is sensible to say that investors do not have much or any
control over how their investments turn out, but most investors do not realize that the future is unforeseeable, and the illusion of control leads to risky decision making. It also has the same outcome as overconfidence, too much trading, and a lack of diversification (Moosa & Ramiah, 2017, p. 116) (Lekovic, 2020, p.80)

3.2.8 Representativeness bias

Representativeness bias means making financial decisions based on data that is easily obtainable but may not be complete or representative. An example can be an investor who puts too much weight on their most recent experiences. Also, investors who put too much weight in the information that the media publishes daily (Lekovic, 2020, p. 83)

When an investor places excessive weight on the latest trends and experiences but does not take into account the average long-term rates, a representative bias arises. When buying stocks that are talked about a lot and that have delivered great quarterly reports and ignoring stocks that have done poorly, representativeness bias has occurred. This can also be linked to overreaction. (Ngoc, 2014, pp. 3)

It is argued that representativeness bias makes people rely on accessible and easily available information when facing a difficult decision (Moosa & Ramiah, 2017, p. 83)

Also, because of the representativeness bias, investors overestimate how likely it is that buying well-known large-cap stocks will be a good investment. These kinds of investment decisions do not seem to be based on fact, since the high demand for shares of large-cap companies means that the share price will be high, and the returns will then be low. (Lekovic, 2020, p.83-84)
3.2.9 Survivorship bias

Survivorship bias is when things that made it through a selection process are given more weight than those that did not, usually because they are not as visible. It can make people think too positively because failures are not considered. For example, companies that no longer exist cannot be used to measure financial performance.

When figuring out investment returns, the survivorship bias happens when companies that no longer exist because of bankruptcy or acquisitions are not considered when calculating performance. A result of survivorship bias is not taking into account all of the factors that affect the return on an investment or the value of a company. Because of this, historical evaluation becomes skewed, giving the impression of good performance when it is not. (Moosa & Ramiah, 2017 pp. 106-108)

3.2.10 Outcome bias

Outcome bias is when people decide to do something based on how it turned out in the past, like investing in a mutual fund based on the returns of the last five years, instead of looking at how the result came about.

Outcome bias may result in investors investing in overvalued assets based on recent results, such as strong performance in gold or a particular stock, without paying attention to valuations or the past price history of the asset class in question. This puts them at risk that the asset valuation may be peaking, which can be a lousy investment decision. (Pompian, 2012, pp. 36-37)

In a study by Ahmad (2017, pp. 1–8), the factors that influence individual investors decision-making while choosing investment opportunities were researched. The research was done in the Pakistani financial markets. The questionnaire was answered by 102 respondents and included 30 variables. From these variables, "past performance of the firm´s stock" was a variable that influenced over half of the respondents. This variable can be linked to outcome
bias. If recent results have been strong and the stock price has risen, there is a possibility that investors will decide to invest in a stock that is overvalued.

3.2.11 Familiarity bias

Familiarity bias is the tendency for investors to choose well-known or familiar investments. This goes against one of the most important rules of finance, which says that diversification lowers risk. Investors who are susceptible to familiarity bias refrain from making investments in unfamiliar locations. This can lead to suboptimal portfolio selection and make it more likely that they will lose money. Because of familiarity bias, investors choose bad investments and don't take into account the risks of a poorly diversified portfolio. (Moosa & Ramiah, 2017 pp. 113–114)

3.2.12 Affinity bias

Affinity bias is the tendency for a person to choose a product or service because they think it will reflect their values, even if it is not in their best interest financially. This idea is more about how a product or service makes someone feel than what it does for them. In the same way, investors may choose to put their money into certain companies, like those that make luxury goods, because they think these companies represent their values or self-image. This may not be the best way to invest if the company that makes the product or service is poorly run, has money problems, or has business problems. (Pompian, 2012, pp. 42-43)

3.2.13 Herding bias

Herd behaviour takes place when you disregard your own analysis or opinion and instead make the irrational choice to follow others investment decisions. (Baker, Filbeck & Ricciardi, 2017, p. 140) (Ngoc, 2014, p.5)

Herding bias results from a variety of factors, including the desire to fit in with other investors, FOMO, or fear of missing out, and the conviction that others are smarter than you or possess information you do not.
In a study by Sadeq (2019, pp. 27–39), he conducted a survey that was answered by 389 respondents. The questionnaire was made up of eight questions and was answered by individual investors. 43.2 percent of respondents answered that they make investment decisions based on market trends and/or other investors. According to respondents, this bias was occurring in all age groups. Herding bias may lead to volatility in the market even if the fundamental values have stayed the same.

4 Google trends study

4.1 Association with search terms market crash and stocks to buy now

These search terms and their association with each other can be an indication of behavioural biases. When investors search for “market crash” they may be experiencing loss aversion bias and trying to protect themselves from possible losses. The ways they would protect their investments are by selling them, reducing the risk in their portfolio, or diversifying their investment allocations. Therefore the search term “stocks to buy now” may have a spike increase so they can protect themselves from possible losses.

In the graph, two spikes can be seen where both search terms have had an increase in search volume. The bigger spike occurred at the end of February 2020, which was the same time as the COVID-19 virus spread to Europe and America. The smaller spike was at the end of 2021.
Figure 1. Graph representing the number of Google searches with the words “stocks to buy now” and “market crash” Source: Google Trends

People experiencing confirmation bias may be looking up “market crash” to confirm their fear of a crash while discounting or ignoring information that indicates a stable market. Whereas investors searching for “what stocks to buy” may be looking at information that confirms their beliefs about certain stocks or investment strategies while contradicting information and sources that indicate their beliefs.

Herding bias may occur while searching for "market crash" by the investor wanting to know that they are not the only ones worrying about a market crash. Another reason may be the fear of missing out and the conformation of social norms. This can lead to impulsive and uninformed decision-making, which may be suboptimal for portfolio performance. When searching for "what stocks to buy," they may not do their own broad and objective research but instead look for stocks that are popular or that others have recommended.
People with an overconfidence bias may look up "what stocks to buy" for a number of reasons. Overconfidence bias is when people tend to overestimate their own skills, knowledge, and expertise, which can lead them to make decisions that are too optimistic or risky. They may believe they possess a unique aptitude for identifying inexpensive companies or outperforming the market, and they are looking for stocks to support their ideas. This may cause individuals to dismiss data that contradicts their ideas and only consider information that confirms their beliefs.

People with an overconfidence bias may look up "market crash" to try to prove their own forecasts or ideas about the market. They may be sure that the market is about to crash and want to find evidence to back up their views. This can make them only look at information that backs up what they already think and ignore information that goes against what they already think. They might think they can predict how the market will move and want to profit from a possible drop by selling investments at the right time or buying stocks at a price. This might not be the best choice, since even experienced buyers have trouble timing the market.

People who have overconfidence bias may also be more likely to invest in ways that are too risky, like putting a lot of money into a single stock or asset class. They may search for "what stocks to buy" to find high-risk, high-reward investments that match their beliefs and expectations.

4.2 Association with search terms dividend investing, growth investing and value investing

These search terms and their reasoning for searching online may indicate behavioural biases. When following an investment strategy for the wrong reason, biases may arise. These reasons will be brought up in this section.
Figure 2. Graph representing the amount of google searches made globally with words “dividend investing”, “growth investing” and “value investing.” Source: Google trends

The search volume globally for the keywords “dividend investing,” “growth investing,” and “value investing” can be seen in the chart below. Around 57% of combined searches were for value investing, 23% for dividend investing, and 20% for growth investing.
Figure 3. A pie chart showing the search volumes made globally.

4.2.1 Russia and dividend investing

The table below shows the search volume for the keywords in Russia for the last 5 years. The keywords are divided much differently than they are globally. Two-thirds of the searches were for "dividend investing" and one-third for "value investing." The reason why "dividend investing" was so much more searched for can be attributed to the war with Ukraine that broke out. Evidence for this can be seen in the graph below.

Figure 4. Pie chart showing keyword search results from Russia from period 15.2.2018–15.2.2023

After the full-scale war broke out with Ukraine on the 24th of February 2022 (Haque et al., 2022, pp. 1–3), buyers in Russia have looked up "dividend investing" more on Google. This is demonstrated by the highest orange spike in Figure 5, found below. One possibility is that investors have become less willing to take risks and have turned to investments that feel safer, like stocks that pay dividends. Another possibility is that investors were looking for ways to make
money in an uncertain economy, and dividend stock trading was seen as a way to do that.

![Search index in Russia](attachment:image.png)

**Figure 5.** Graph representing the amount of Google searches made in Russia with the words "dividend investing," "growth investing," and "value investing."

Behavioural biases that could be at play in this situation include loss aversion bias. Investors tend to feel the pain of losses more strongly than the pleasure of winning. During the war with Ukraine, investors in Russia may have been especially worried about the possibility of losing money. To reduce their portfolio risk, they may have looked for investments like stocks that pay dividends.

When searching for dividend investing on Google, investors may have been set on the idea that high-dividend stocks are a safe and reliable investment and may have looked for evidence that supports this view without taking into account other factors that might influence the success of these stocks. Action taken based on this information would qualify as anchoring bias.
Because sanctions were imposed on Russian banks and assets frozen, there is a possibility that some Russian investors wanted to invest in foreign markets such as the USA, Canada, and France’s stock markets to gain stable income from international markets with stronger currencies than the ruble. The Russian ruble lost around 30% of its value in the first months after the full-scale war broke out. (Yahoo Finance, 2023) If an investor had invested in the foreign markets, they would have avoided the familiarity bias, where the investor invests in stocks that they are well-known for; in this case, it could be in stocks that are listed on the Moscow stock exchange.

When looking for consistent income, dividend investing is often seen as a way to do so. Due to the war with Ukraine, there is a lot of economic and global instability. Some Russian investors may be looking for ways to protect their portfolios from market volatility and get steady returns in the form of dividend payments.

4.2.2 USA and value investing

The USA search volume chart reflects the global search volume. Value investing had the highest search volume and is a popular investing method that is also used by one of the most popular investors, Warren Buffet. This can also be seen as a reason why the search index peaked in May 2022, when Berkshire Hathaway had their annual shareholder meeting in person after two years of virtual meetings.
Figure 6. Graph representing the amount of Google searches made in the USA with the words "dividend investing," "growth investing," and "value investing."

Figure 7. Pie chart showing keyword search results from the USA with a timeframe of 15.2.2018–15.2.2023
Value investors invest in companies that appear to trade at a share price below their fundamental price. Value investors usually prefer low ratios for price-to-earnings (P/E), price-to-book (P/B), and high dividend yields.

If searching for “value investing” there are some biases the American investor can expose oneself to:

- Confirmation bias: If an investor thinks that value investing is the best way to make money, he or she may only look for information that backs up this view and ignore evidence that says otherwise.

- Anchoring bias: An investor who reads a news article or a blog post that praises the benefits of value investing may decide to base their opinions solely on this piece of information rather than looking for other points of view.

- Hindsight bias: An investor who has had success with value investing in the past may think that this strategy will always work and ignore the chance that market conditions or other factors like political or natural events.

- Overconfidence bias: An investor may be convinced of their ability to identify undervalued stocks and may not see the risks or limits of this strategy.

- Herding bias: Investors blindly following the investment strategies from others. In this case Warren Buffet´s value investing strategy after Berkshire Hathaway had their annual shareholder meeting.

4.2.3 Vietnam and growth investing

Growth stocks are shares in companies that have an anticipated growth rate much higher than the average growth rate in the market. These companies do not usually
pay dividends but reinvest profits back into the company. This is done to accelerate growth in the short term. Investors seek profits through capital gains, which in this case means that they expect to sell the stock at a higher price in the future. (Hayes, 2022)

Figure 8. Graph representing the amount of Google searches made in Vietnam with the words "dividend investing," "growth investing," and "value investing."

In the figure below, May 2019 is marked, which is the same time as when the keyword "growth investing" was searched the most. The index represents the VN30 index, which holds the 30 biggest companies by market cap on the Vietnamese Ho Chi Minh Stock Exchange.
Figure 9: Graph of the VN30 index performance for the past 5 years

Source: https://www.investing.com/indices/vn-30

The pie chart showing keyword frequency for Vietnam slightly differs from the USA. Growth investing has a bigger search volume than dividend investing from the USA. Growth investing has a bigger search volume than dividend investing. The reason for this can be hard to pinpoint.
Growth stocks provide a higher potential for profits but are riskier and more volatile. One of the most talked-about growth stock investors at the moment is Cathie Wood and her investment management company, ARK Invest. In 2020 and 2021, her funds made incredible profits and gained wide popularity. Arks biggest holdings are in Tesla, Roku, Zoom, and Coinbase. In 2020, they made 152% in profit, but next year, in 2022, their stock value went down by 44.07% (ARK Investment, 2022).
Vietnam’s rapid economic growth may have contributed to investors’ optimism, overconfidence, and herding bias, leading them to seek out and invest in rapidly growing companies. A recent study by Luu et al. (2021) found that behavioural elements, including investor emotions, overconfidence, and herd behaviour, can significantly influence investment decisions in the Vietnamese stock market. The study also revealed that 78.2% of investors could be influenced by the overconfidence bias.

Vietnamese investors may think they can predict future market trends based on what has happened in the past. This could lead them to think they can use a growth investing plan again successfully. In this case, they may be thinking about growth trading based on how certain stocks or industries have done in the past without thinking about possible risks or uncertainties in the future. This would lead to hindsight bias.

It should also be acknowledged that the Vietnamese market does not have the same number of blue-chip companies as the USA. For example, IBM, 3M, and AT&T are strong in their industries and attractive dividend stocks among investors.

5 Limitations and area for future research

5.1.1 Limitations

Google Trends data can be useful for figuring out what people are interested in, but there are a few things to keep in mind when reading the results of this study.

First of all, Google Trends data only comes from people who use the internet and search engines, which may not be a good representation of the whole investor community. This means that people who do not use the internet or Google’s search engine are not included in the data, which could influence the
results. Also, the data may be biased towards younger people who use the internet more.

Also, the study only looked at the effects of cognitive and emotional biases on investment decisions. It did not look at the reasoning behind why people Google the keywords or how the keywords would affect how individual investors make decisions. This limits the study's reach and might not give a full picture of how biases affect investment decisions.

Lastly, the study only looked at the United States, Vietnam, Russia, and global search indexes, so the results may not be applicable to other places. This study may not be able to show how biases affect investment decisions in other specific parts of the world because of cultural differences. Also, the time period was set for 5 years, 11.3.2018–11.3.2023, where the index compares to the maximum search amount of that period. The results will differ when using longer or shorter time periods.

5.1.2 Area for future research

There are many ways that future research can build on the results and learn more about how behavioural biases affect individual investors decision-making by using Google Trends data.

Using Google Trends data, one area for future study could be to look at how behavioural biases affect the decisions of individual buyers in different cultures and areas. This would help find out if the results of this study hold true in other situations and show how cultural and geographical differences may affect how search terms may differ and how different biases may be more present.

Polls, questionnaires, and interviews could be used to add to the data from Google Trends. This is another area that could be investigated in the future.
This would help to learn more about the topic and show if the results of this study are true.

Using Google Trends data, future studies could also look at how cognitive and emotional biases affect investment decisions over the long term. This would help find trends and changes in Google searches over time, which could give clues about how well intervention methods and awareness would work to reduce biases.

Also, the study was made with a focus on individual investors. So, studies could be done focusing on specific investors. Such as high net worth individuals or traders.

6 Discussion

Measuring biases can be hard. It can be complicated to figure out how behavioural biases affect investment decisions. Many biases happen unconsciously and may be hard to measure. Also, one event may have many biases happening at the same time.

It may not be possible to apply the results of behavioural finance studies to all investors or all markets. The effects of behavioural biases can be different for each person, each culture, and each market.

Behavioural finance studies often look at how a group of investors act on average. But people's actions can be vastly different, and the results of studies may not show that accurately.

The results of behavioural finance studies may not always apply to real-world investment decisions. Investors might not act the way that economists think they will.
Behavioural finance is a relatively new field, and there is still a lot to learn about how biases in people's thoughts and actions affect investment decisions. The complexity of how people act and make decisions has not been fully studied yet.

Adding behavioural factors to investment models can be hard because of how complicated human behaviour is and how hard it is to measure the effects of biases.

Even with these problems, the study of behavioural finance has taught a lot about how human behaviour affects investment decisions and why people sometimes do things that do not give them the best outcome. More research in this area might help to get around these problems and give us a fuller picture of how behavioural biases affect investment decisions.

A combination of behavioural finance with quantitative techniques is known as quantitative behavioural finance. Its objective is to offer a more precise examination of investor behaviour and the influence of behavioural biases on investing choices. Investors may make better judgements and increase their profits by incorporating the insights from behavioural finance into their investment decision-making. In addition to increasing market efficiency, quantitative behavioural finance may assist in identifying and managing the risks related to behavioural biases. Additionally, it can assist investors in better matching their behaviour and investing goals, minimizing the influence of behavioural biases on investment choices. The application of quantitative techniques in behavioural finance can increase the precision of investment models and investment decision-making while enabling a more thorough understanding of the impact of behavioural biases in investment decision-making.

It is difficult to tell how individual investors will act based on their biases, which makes it hard to use this information to make decisions that would generate
profits. But recognising one's own biases can help reduce their effect on
decision-making and lead to better portfolio performance.

Even though investors cannot avoid all biases, they can minimize their effect on
their decision making by being aware of them. To do this, you need to examine
your own behavioural biases, fight the urge to act on them, and produce
investment strategies that you will follow. Because many experienced investors
have learned that success often comes from controlling their emotions and
getting over their biases, they often avoid making the same mistakes that many
new investors do. Therefore new investors should investigate their behaviour
when making investment decisions. (Baker & Ricciardi, 2014, pp.7-10)

7 Conclusion

This thesis focused mostly on cognitive and emotional biases in investing
decisions in order to better understand how behavioural biases affect the
decision-making of individual investors. The study's findings showed that these
biases can significantly affect how investors make decisions, resulting in
suboptimal investment decisions and potential losses for individual investors.

The literature review consisted of an overview of the main cognitive and
emotional biases that influence investing choices, such as confirmation bias,
overconfidence bias, loss aversion bias, and herd mentality.

A study of the search index for the phrases "dividend investing," "growth
investing," and "value investing" reveals a variety of cognitive biases that
investors may give in to while following a certain investment strategy. The study
discovered regional and seasonal differences in search behaviour for these
words. Loss aversion bias, which occurred as investors sought safer assets to
reduce portfolio risk, may be to blame for a spike in "dividend investing"
searches in Russia amid the continuing war in Ukraine. In contrast, Warren
Buffet's popularity in the United States may be attributable to confirmation bias
and anchoring bias. To conduct thorough research on and stick to investment strategies and make wise and unbiased investment decisions, it is crucial to be aware of potential biases.

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